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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,552	07/25/2003	Hideki Yamai	2003_1036A	9323

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EXAMINER

LEUNG, JENNIFER A

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 10/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/626,552

Applicant(s)

YAMAI ET AL.

Examiner

Jennifer A. Leung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 8-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's amendment submitted on August 3, 2006 has been received and carefully considered. The substitute specification and abstract are acceptable. Claims 1-7 are cancelled. Claims 8-27 are newly added and currently under consideration.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 8, 9, 18 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Funahashi et al. (JP 06-296980).

Regarding claims 8 and 18, Funahashi et al. (FIG. 1; Abstract; Machine Translation) discloses an apparatus comprising: a dissolving tank 1 having an inlet (at the end of cylindrical subtank 5) in a lower part thereof; a powder supply system (comprising hopper 14, valve 15) in communication with the inlet; an agitating member (impeller 10) rotatably disposed in the dissolving tank 1; and rise inhibiting structure or means (i.e., a fluidized layer height suppressing device 12) disposed in the dissolving tank 1 above the agitating member 10.

Regarding claims 9 and 19, the apparatus of Funahashi et al. further comprises a supply system (i.e., via valved feed pipe 6) for supplying water to the lower portion of the dissolving tank 1, and a solution discharge system (via pipe 8) for discharging solution from an upper part of the dissolving tank 1 after the solution has flowed past the rise inhibiting structure or means

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12. Although Funashi et al. does not disclose that the supply system 6 is for supplying nitric acid to the lower portion of the dissolving tank 1, the apparatus structurally meets the claims because a recitation of the intended use of the claimed invention (e.g., for supplying nitric acid) must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Instant claims 8, 9, 18 and 19 structurally read on the apparatus of Funahashi et al.

3. Claims 8, 9, 17-19 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Russell et al. (US 2,767,847).

Regarding claims 8 and 18, Russell et al. (FIG. 1) discloses an apparatus comprising a dissolving tank 11 having an inlet (i.e., at the end of line 17) in a lower part thereof; a powder supply system in communication with the inlet (i.e., line 17 is for the supply of solids); an agitating member (i.e., stirrer 15) rotatably disposed in the dissolving tank 11; and a rise inhibiting structure or means (i.e., first baffled zone 10) disposed in the dissolving tank 11 above the agitating member 15.

Regarding claims 9 and 19, Russell et al. further discloses a supply system (comprising line 14) for supplying a feed into the lower portion of the dissolving tank 11, and a solution discharge system (i.e., comprising effluent outlet line 18) for discharging the solution from an upper part of the dissolving tank 11 after the solution has flowed past the rise inhibiting structure or means 10. Although Russell et al. does not disclose that the supply system 14 is for supplying nitric acid to the lower portion of the dissolving tank 11, the apparatus structurally meets the claims because a recitation of the intended use of the claimed invention (e.g., for supplying nitric

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acid) must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Regarding claims 17 and 27, the apparatus (FIG. 1) further comprises a shaft 16 supporting the agitating member 15, wherein the riser inhibiting structure or means 10 has an outer peripheral surface (at the upper end of frusto-conical partition 20) abutting an inner surface of the dissolving tank 11, and a central hole (i.e., opening 21) through which shaft 16 extends.

Instant claims 8, 9, 17-19 and 27 structurally read on the apparatus of Russell et al.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 10-13, 15, 16, 20-23, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Russell et al. (US 2,767,847) in view of Smith et al. (US 2,696,506).

Regarding claims 10 and 20, Russell et al. discloses that the temperature within tank 11

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may be maintained within the range from about 350 °F to 600 °F (see column 3, lines 2-5; also, Example IV). Russell et al., however, is silent as to the apparatus further comprising a steam jacket surrounding an outer peripheral surface of tank 11, for maintaining the recited temperature range. In any event, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a steam jacket to the outer peripheral surface of the tank 11 in the apparatus of Russell et al., on the basis of suitability for the intended use thereof, because the use of steam jackets for heating the contents of a vessel is conventionally known in the art, as further evidenced by Smith et al. (i.e., a steam jacket on the outer peripheral surface of pipe 32; column 3, line 66 to column 4, line 40; FIG. 1).

Regarding claims 11 and 21, the rise inhibiting structure or means 10 comprises fixed blades (i.e., frusto-conical partition 20, vanes 22; FIG. 1)

Regarding claims 12 and 22, the fixed blades 20,22 have a descending slope with respect to a swirling direction of the non-dissolved powder during swirling and rising of the non-dissolved powder to the fixed blades (see flow arrows 27, 28, 29; FIG. 1).

Regarding claims 13 and 23, the apparatus (FIG. 1) further comprises a top board (comprising the second baffles zone 23) having a number of distribution apertures (see cross-section in FIG. 2) above the fixed blades 20,22.

Regarding claims 15 and 25, the rise inhibiting structure or means 10 comprises a reversed-conical shaped swirl and rise-inhibiting vane (i.e., frusto-conical partition 20) having a central distribution hole (i.e., opening 21).

Regarding claims 16 and 26, the apparatus (FIG. 1) further comprises a shaft 16 supporting the agitating member 15, wherein the riser inhibiting structure or means 10 has an

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outer peripheral surface (at the upper end of frusto-conical partition 20) abutting an inner surface of the dissolving tank 11, and a central hole (i.e., opening 21) through which shaft 16 extends.

5. Claims 14 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Russell et al. (US 2,767,847) in view of Smith et al. (US 2,696,506), as applied to claims 10 and 20 above, and further in view of Fujikawa et al. (JP 2001-198444).

Russell et al. is silent as to the rise inhibiting structure or means 10 comprising half-round shaped swirl and rise inhibiting plates arranged one above another and overlapping one another in an axial direction of the dissolving tank 11, with each of the plates having a slope ascending outwardly. Fujikawa et al. teaches a rise inhibiting structure or means comprising a plurality of half-round shaped plates (see FIG. 12, with plates 11) arranged one above another and overlapping one another in an axial direction of the dissolving tank 4 (i.e., "... the tabular smallness member 11 may be formed so that it may *overlap*," see section [0018]), wherein the plates 11 may have a slope ascending outwardly (see FIG. 8). It would have been obvious for one of ordinary skill in the art at the time the invention was made to substitute the rise inhibiting structure or means of Fujikawa et al. for the rise inhibiting structure or means 10 in the modified apparatus of Russell et al., on the basis of suitability for the intended use thereof, because the substitution of known equivalent structures involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958).

#### ***Response to Arguments***

6. Applicant's arguments with respect to claims 8-27 have been considered but are moot in view of the new ground(s) of rejection, necessitated by amendment.

**Conclusion**


7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). As set forth in 37 CFR 1.136(a), a shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

\* \* \*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Leung whose telephone number is (571) 272-1449. The examiner can normally be reached on 9:30 am - 5:30 pm Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jennifer A. Leung  
October 18, 2006 

  
ALEXA DOROSHENK NECKEL  
PRIMARY EXAMINER